

IN THE CLAIMS:

1. (Currently Amended) A broadcasting apparatus that broadcasts a specific program to which a reproduction time period between a starting time and a finishing time is specified, the reproduction being performed by a receiving apparatus, the broadcasting apparatus comprising:

5 allotment unit operable to allot a broadcasting bandwidth for the reproduction time period to the specific program and allotting a part of the broadcasting bandwidth for a preceding time period immediately before the reproduction time period to the specific program and the other part of the broadcasting bandwidth to another program;

script generation unit operable to generate (a) when the receiving apparatus
10 receives ~~a storage instruction~~ an event message for instructing storage, a script for storing program data of the specific program in a storage unit of the receiving apparatus, and (b) when the receiving apparatus receives ~~a reproduction instruction~~ an event message for instructing reproduction, a script for the receiving apparatus to reproduce the program data of the specific program in a case where the program data of the specific program has been stored in the storage
15 unit, each script being automatically stored when the receiving apparatus receives the script;

an event message generation unit operable to generate ~~a plurality of storage instructions and a reproduction instruction~~ the event message for instructing storage and the event message for instructing reproduction;

transmission unit operable to transmit a normal program that includes a video
20 stream and an audio stream, and further in accordance with the result of allotment by the allotment unit, repeatedly multiplex program data of the other program with the normal program based on a data carousel transmission method and transmit a first multiplexed result while

multiplexing the program data of the specific program and the script with the normal program and transmitting a second multiplexed result in the preceding time period, and repeatedly
25 multiplex the program data of the specific program and the script with the normal program and transmit the second multiplexed result in the reproduction time period; and

control unit operable to control the transmission unit to transmit ~~the storage instructions~~ event message for instructing storage in the preceding time period and to transmit the ~~reproduction instruction~~ event message for instructing reproduction at the starting time,

30 wherein the specific program has the program data that relates to a commercial message which is inserted in the normal program, and

the reproduction time period of the specific program is the same as a broadcast time period of the commercial message.

2. (Previously Presented) The broadcasting apparatus of Claim 1,

wherein the allotment unit allots the broadcasting bandwidth for the preceding time period so that the part of the broadcasting bandwidth becomes narrower than the other part of the broadcasting bandwidth, and

5 the preceding time period is longer than a time period that is necessary for transmitting the program data of the specific program at least once using the part of the bandwidth.

3. (Cancelled)

4. (Previously Presented) The broadcasting apparatus of Claim 1, further comprising:

a storage unit for storing as the program data of the specific program (a) first contents data that makes up the specific program and (b) second contents data that is different
5 from the first contents data in part,

wherein the transmission unit transmits the first contents data in the preceding time period and transmits the second contents data in the reproduction time period of the specific program.

5-8. (Cancelled)

9. (Currently Amended) A broadcasting apparatus that transmits a data broadcasting program and a first and a second specific programs which are inserted in the data broadcasting program, a total time period between a starting time and a finishing time for broadcasting the data broadcasting program including a first time period during which the first specific program is
5 broadcast and a second time period during which the second specific program is broadcast, the broadcasting apparatus comprising:

allotment unit operable to

(a) allot a part of the broadcasting bandwidth to the first and the second specific programs and the other part of the broadcasting bandwidth to the data broadcasting
10 program for all of the time periods other than the first and the second time periods in the total time-period, and

(b) allot a part of the broadcasting bandwidth to the first specific program and the other part of the broadcasting bandwidth to the second specific program for the first and the second time periods;

15 script instruction generation unit operable to (i) generate (a) when a receiving apparatus receives a first ~~storage instruction~~ event message for instructing storage, a script for

storing program data of the first specific program in a storage unit of the receiving apparatus and

(b) when the receiving apparatus receives a second ~~storage instruction~~ event message for instructing storage, a script for storing program data of the second specific program in the

20 storage unit and (ii) generate (a) when receiving a first ~~reproduction instruction~~ event message for instructing reproduction, a script instructing the receiving apparatus to reproduce the program

data of the first specific program in a case that the program data of the first specific program has been stored in the storage unit and (b) when receiving a second ~~reproduction instruction~~ event

message for instructing reproduction, a script for the receiving apparatus to reproduce the

25 program data of the second specific program in a case that the program data of the second specific program has been stored in the storage unit, each script being automatically stored when

the receiving apparatus receives the script;

an event message generation unit operable to generate a ~~plurality of first storage instructions, a plurality of second storage instructions, a first reproduction instruction and a~~

30 ~~second reproduction instruction~~ the plurality of event messages for instructing storage and the plurality of event messages for instructing reproduction;

transmission unit operable to transmit a normal program that includes a video stream and an audio stream, and

(a) repeatedly transmit the scripts during the total time period, and

35 (b) in accordance with the result of allotment by the allotment unit,

(i) repeatedly multiplex the program data of the data broadcasting program during all of time periods other than the first and the second time periods in the total time period, and

(ii) repeatedly multiplex the program data of each of the first and the
40 second specific programs during the total time period; and

control unit operable to control the transmission unit so as to transmit (a) the first ~~storage-instructions~~ event message for instructing storage before the first time period (b) the first ~~reproduction-instruction~~ event message for instructing reproduction at the starting time of the first time period (c) the second ~~storage-instructions~~ event message for instructing storage before
45 the second time period, and (d) the second ~~reproduction-instruction~~ event message for instructing reproduction at the starting time of the second time period,

wherein in accordance with the result of allotment by the allotment unit, repeatedly multiplex program data of the first and second specific program with the normal program based on a data carousel transmission method and transmit a first multiplexed result
50 while multiplexing the program data of the first and second specific programs and the script with the normal program and transmitting a second multiplexed result in the preceding time period, and repeatedly multiplex the program data of the specific first and second programs and the script with the normal program and transmit the second multiplexed result in the reproduction time period,

55 the first specific program and the second specific program respectively have the program data that relates to a first commercial program and a second commercial program which are inserted in the normal program, and

the first time period and the second time period respectively are the same as broadcast time periods of the first commercial program and the second commercial program.

10. (Cancelled)

11. (Previously Presented) The broadcasting apparatus of Claim 9, further comprising:

storage unit operable to store as the program data of the first specific program (a) first contents data that makes up the first specific program and (b) second contents data that is different from the first contents data in part,

wherein the transmission unit transmits the first contents data in a time period other than the first time period in the total time period, and transmits the second contents data in the first time period.

12. (Currently Amended) A broadcasting apparatus that transmits a data broadcasting program and a first and a second specific programs which are inserted in the data broadcasting program, the broadcasting apparatus comprising:

allotment unit operable to

(a) allot a broadcasting bandwidth for a first time period and a second time period to the first specific program and the second specific program, the first time period and the second time period are included in a total time period between a starting time and a finishing time for broadcasting the data broadcasting program, and

(b) allot (1) a broadcasting bandwidth to the data broadcasting data program in the total time period except for the first time period and the second time period (2) a part of the broadcasting bandwidth to the first specific program for a time period preceding to the first time period in the total time period, and (3) a part of the broadcasting bandwidth to the second specific program for a time period preceding to the second time period in the total time period;

script instruction unit operable to (i) generate (a) when a receiving apparatus receives a first ~~storage-instruction~~ event message for instructing storage, a script for storing program data of the first specific program in a storage unit of the receiving apparatus and (b) when the receiving apparatus receives a second ~~storage-instruction~~ event message for instructing

storage, a script for storing program data of the second specific program in the storage unit and

(ii) generate (a) when receiving a first ~~reproduction-instruction~~ event message for instructing

20 reproduction, a script instructing the receiving apparatus to reproduce the program data of the first specific program in a case that the program data of the specific program has been stored in the storage unit and (b) when receiving a second ~~reproduction-instruction~~ event message for instructing reproduction, a script instructing the receiving apparatus to reproduce the program data of the second specific program in a case that the program data of the second specific
25 program has been stored in the storage unit, each script being automatically stored when the receiving apparatus receives the script;

an event message generation unit operable to generate a plurality of first-storage instructions, a plurality of second storage instructions, a first reproduction instruction and a second reproduction instruction event messages for instructing storage and a plurality of event
30 messages for instructing reproduction;

transmission unit operable to transmit a normal program that includes a video stream and an audio stream and

(a) repeatedly transmit during the total time period, and

(b) in accordance with the result of allotment by the allotment unit,

35 (i) transmit repeatedly the program data of the data broadcasting program during all of time periods other than the first and the second time periods in the total time period,

(ii) repeatedly multiplex the program data of the first specific program during the first time period and the time period preceding to the first time period, and

40 (iii) repeatedly multiplex the program data of the second specific program during the second time period and the time period preceding to the second time period; and

unit operable to control the transmission unit so as to transmit (i) a plurality of the first ~~storage-instructions~~ event messages for instructing storage before the first time period (ii) a
45 plurality of the second ~~storage-instructions~~ event messages for instructing storage before the second time period (iii) the first ~~reproduction-instruction~~ event message for instructing reproduction at the starting time of the first time period, and (iv) the second ~~reproduction instruction~~ event message for instructing reproduction at the starting time of the second time period,

50 wherein in accordance with the result of allotment by the allotment unit, repeatedly multiplex program data of the first and second specific program with the normal program based on a data carousel transmission method and transmit a first multiplexed result while multiplexing the program data of the first and second specific programs and the script with the normal program and transmitting a second multiplexed result in the preceding time period,
55 and repeatedly multiplex the program data of the specific first and second programs and the script with the normal program and transmit the second multiplexed result in the reproduction time period,

the first specific program and the second specific program respectively have the program data that relates to a first commercial program and a second commercial program which
60 are inserted in the normal program, and

the first time period and the second time period respectively are the same as broadcast time periods of the first commercial program and the second commercial program.

13. (Cancelled)

14. (Previously Presented) The broadcasting apparatus of Claim 12, further
65 comprising:

storage unit operable to store as the program data of the first specific program (a)
first contents data that makes up the first specific program and (b) second contents data that is
different from the first contents data in part,

wherein the transmission unit transmits the first contents data in a time period
70 preceding to the first time period in the total time period, and transmits the second contents data
in the first time period.

15. (Currently Amended) A broadcasting method for broadcasting a specific program
to which a reproduction time period between a starting time and a finishing time is specified, the
reproduction being performed by a receiving apparatus, the broadcasting method comprising the
steps of:

5 an allotment step for allotting a broadcasting bandwidth for the reproduction time
period to the specific program and allotting a part of the broadcasting bandwidth for a preceding
time period immediately before the reproduction time period to the specific program and the
other part of the broadcasting bandwidth to another program;

a script generation step for generating (a) when the receiving apparatus receives a
10 ~~storage instruction~~ an event message for instructing storage, a script for storing program data of
the specific program in a storage unit of the receiving apparatus, and (b) when the receiving
apparatus receives ~~a reproduction instruction~~ an event message for instructing reproduction, a
script for the receiving apparatus to reproduce the program data of the specific program in a case
where the program data of the specific program has been stored in the storage unit;

15 [[a]] an event message generation step for generating a plurality of ~~storage~~
~~instructions~~ event messages for instructing storage and a ~~reproduction instruction~~ an event
message for instructing reproduction;

 a transmission step for transmitting a normal program that includes a video stream
and an audio stream, and further in accordance with the result of allotment in the allotment step,
20 repeatedly multiplex program data of the other program with the normal program based on a data
carousel transmission method and transmit a first multiplexed result while multiplexing the
program data of the specific program and the script with the normal program and transmitting a
second multiplexed result in the preceding time period, and repeatedly multiplex the program
data of the specific program and the script with the normal program and transmit the second
25 multiplexed result in the reproduction time period; and

 a control step operable for controlling a transmission unit to transmit ~~the storage~~
~~instructions~~ the plurality of event messages for instructing storage in the preceding time period
and to transmit the ~~reproduction instruction~~ event message for instructing reproduction at the
starting time,

30 wherein the specific program has the program data that relates to a commercial
message which is inserted in the normal program, and

 the reproduction time period of the specific program is the same as a broadcast
time period of the commercial message.

16. (Currently Amended) A broadcasting method for broadcasting a data
broadcasting program and a first specific program and a second specific program which are
inserted in the data broadcasting program, a total time period between a starting time and a
finishing time for broadcasting the data broadcasting program including a first time period

during which the first specific program is broadcast and a second time period during which the second specific program is broadcast, the broadcasting method comprising the steps of:

an allotment step for

(a) allotting a part of the broadcasting bandwidth to the first and the second specific programs and the other part of the broadcasting bandwidth to the data broadcasting program for all of time periods other than the first and the second time periods in the total time period, and

(b) allotting a part of the broadcasting bandwidth to the first specific program and the other part of the broadcasting bandwidth to the second specific program for the first and the second time periods;

a script instruction generation step for (i) generating (a) when a receiving apparatus receives a first ~~storage instruction~~ event message for instructing storage, a script for storing program data of the first specific program in a storage unit of the receiving apparatus and (b) when receiving a second ~~storage instruction~~ event message for instructing storage, a script for storing program data of the second specific program in the storage unit, and (ii) generating (a) when receiving a first ~~reproduction instruction~~ event message for instructing reproduction, a script for the receiving apparatus to reproduce the program data of the first specific program in a case that the program data of the specific program has been stored in the storage unit and (b) when receiving a second ~~reproduction instruction~~ event message for instructing reproduction, a script for the receiving apparatus to reproduce the program data of the second specific program in a case that the program data of the second specific program has been stored in the storage unit, each script being automatically stored when the receiving apparatus receives the scripts;

[[a]] an event message generation step for generating a plurality of ~~first storage instructions, a plurality of second storage instructions, a first reproduction instruction~~ event

messages for instructing storage and a ~~second reproduction instruction~~ plurality of event

30 messages for instruction reproduction; and

a transmission step for transmitting a normal program that includes a video stream and an audio stream, and

(a) repeatedly transmitting the scripts during the total time period, transmitting the first ~~storage instructions~~ event messages for instructing storage before the first
35 time period (ii) the first ~~reproduction instruction~~ event message for instruction reproduction at the starting time of the first time period (iii) the second ~~storage instructions~~ event messages for instructing storage before the second time period, and (iv) the second ~~reproduction instruction~~ event message for instruction reproduction at the starting time of the second time period, and

(b) in accordance with the result of allotment by the allotment step,

40 (i) repeatedly multiplex the program data of the data broadcasting program during all of time periods other than the first and second time periods in the total time period, and with the normal program based on a data carousel transmission

(ii) repeatedly multiplex the program data of each of the first and the second specific programs during the total time period with the normal program;

45 wherein, the first and the second specific programs have the program data that relates to first and second commercial messages, respectively, which are inserted in the normal program, and

the reproduction time period of the specific program is the same as a broadcast time period of the commercial message.

17. (Currently Amended) A broadcasting method for broadcasting a data broadcasting program and a first specific program and a second specific program which are inserted in the data broadcasting program, the broadcasting method comprising the steps of:

an allotment step for (a) allotting a broadcasting bandwidth for a first time period
5 and a second time period to the first specific program and the second specific program, the first time period and the second time period are included in a total time period between a starting time and a finishing time for broadcasting the data broadcasting program, and (b) allotting (1) a broadcasting bandwidth to the data broadcasting data program in the total time period except for the first time period and the second time period (2) a part of the broadcasting bandwidth to the
10 first specific program for a time period preceding to the first time period in the total time period, and (3) a part of the broadcasting bandwidth to the second specific program for a time period preceding to the second time period in the total time period;

a script instruction generation step for (i) generating (a) when receiving a first ~~storage-instruction~~ event message for instructing storage, a script for storing program data of the
15 first specific program in a storage unit of a receiving apparatus and (b) when receiving a second ~~storage-instruction~~ event message for instructing storage, a script for storing program data of the second specific program in the storage unit, and (ii) generating (a) when receiving a first ~~reproduction-instruction~~ event message for instructing reproduction, a script instructing the receiving apparatus to reproduce the program data of the first specific program in a case that the
20 program data of the specific program has been stored in the storage unit and (b) when receiving a second ~~reproduction-instruction~~ event message for instructing reproduction, a script instructing the receiving apparatus to reproduce the program data of the second specific program in a case

that the program data of the second specific program has been stored in the storage unit, each script being automatically stored when the receiving apparatus receives the scripts;

25 [[a]] an event message generation step for generating a plurality of first ~~storage instruction~~ event messages for instructing storage, a plurality of second ~~storage instruction~~ event messages for instructing storage, a first ~~reproduction instruction~~ event message for instructing reproduction and a second ~~reproduction instruction~~ event message for instructing reproduction; and

30 a transmission step for transmitting a normal program that includes a video stream and an audio stream and further in accordance with the allotment step

 repeatedly transmitting (i) the first ~~storage instructions~~ event messages for instructing storage before the first time period (ii) the second ~~storage instructions~~ event messages for instructing storage before the second time period (iii) the first ~~reproduction instruction~~ event message for instructing reproduction at the starting time of the first time period, and (iv) the second ~~reproduction instruction~~ event message for instructing reproduction at the starting time of the second time period, during the total time period, and

(b) in accordance with the result of allotment by the allotment unit,

 (i) repeatedly multiplexing the program data of the data broadcasting
40 program during all of time periods other than the first and the second time periods in the total time period,

 (ii) repeatedly multiplexing the program data of the first specific program during the first time period and the time period preceding to the first time period, and

 (iii) repeatedly multiplexing the program data of the second specific
45 program during the second time period and the time period preceding to the second time period; and

wherein, in accordance with the result of allotment by the allotment unit, repeatedly multiplex program data of the first and second specific program with the normal program based on a data carousel transmission method and transmit a first multiplexed result while multiplexing the program data of the first and second specific programs and the script with the normal program and transmitting a second multiplexed result in the preceding time period, and repeatedly multiplex the program data of the specific first and second programs and the script with the normal program and transmit the second multiplexed result in the reproduction time period,

the first and the second specific programs have the program data that relates to first and second commercial messages, respectively, which are inserted in the normal program, and

the reproduction time period of the specific program is the same as a broadcast time period of the commercial message.

18. (Currently Amended) A program recording medium which is readable for a computer in a broadcasting apparatus, the broadcasting apparatus broadcasts a specific program to which a reproduction time period between a starting time and finishing time is specified, the reproduction being performed by a receiving apparatus, a computer program embodied on the program recording medium has the computer conduct the steps of:

an allotment step for allotting a broadcasting bandwidth for the reproduction time period to the specific program and allotting a part of the broadcasting bandwidth for a preceding time period immediately before the reproduction time period to the specific program and the other part of the broadcasting bandwidth to other program;

10 a script generation step for generating (a) when the receiving apparatus receives
[[a]] ~~an storage instruction~~ event message for instructing storage, a script for storing program
data of the specific program in a storage unit of the receiving apparatus, and (b) when the
receiving apparatus receives ~~a reproduction instruction~~ an event message for instructing
reproduction, a script for the receiving apparatus to reproduce the program data of the specific
15 program in a case where the program data of the specific program has been stored in the storage
unit, each script being automatically stored when the receiving apparatus receives the scripts;

a message generation step for generating a plurality of ~~storage instruction~~ event
message for instructing storage and ~~a reproduction instruction~~ an event message for instructing
reproduction; and

20 in accordance with the result of allotment by the allotment unit, repeatedly
multiplex program data of the first and second specific program with the normal program based
on a data carousel transmission method and transmit a first multiplexed result while multiplexing
the program data of the first and second specific programs and the script with the normal
program and transmitting a second multiplexed result in the preceding time period, and
25 repeatedly multiplex the program data of the specific first and second programs and the script
with the normal program and transmit the second multiplexed result in the reproduction time
period,

a control step for controlling the transmission unit to transmit the ~~storage~~
~~instructions~~ event messages for instructing storage in the preceding time period and to transmit
30 the ~~reproduction instruction~~ event message for instructing reproduction at the starting time,

wherein, the specific program has the program data that relates to a commercial
message which is inserted in the normal program, and

the reproduction time period of the specific program is the same as a broadcast time period of the commercial message.

19. (Currently Amended) A program recording medium which is readable for a computer in a broadcasting apparatus, the broadcasting apparatus transmits a data broadcasting program and a first and a second specific programs which are inserted in the data broadcasting program, a total time period between a starting time and a finishing time for broadcasting the data broadcasting program including a first time period during which the first specific program is broadcast and a second time period during which the second specific program is broadcast, a computer program embodied on the program recording medium has the computer conduct the steps of:

an allotment step for

(a) allotting a part of the broadcasting bandwidth to the first and the second specific programs and the other part of the broadcasting bandwidth to the data broadcasting program for all of time periods other than the first and the second time periods in the total time period, and

(b) allotting a part of the broadcasting bandwidth to the first specific program and the other part of the broadcasting bandwidth to the second specific program for the first and second time periods;

a script instruction generation step for (i) generating, when a receiving apparatus receives a first ~~storage instruction~~ event message for instructing storage, a script for storing program data of the first specific program in a storage unit of the receiving apparatus and (b) when receiving a second ~~storage instruction~~ event message for instructing storage, a script for storing program data of the second specific program in the storage unit, and (ii) generating (a)

when receiving a first ~~reproduction-instruction~~ event message for instructing reproduction, a script instructing the receiving apparatus to reproduce the program data of the first specific program in a case that the program data of the first specific program has been stored in the storage unit and (b) when receiving a second ~~reproduction-instruction~~ event message for instructing reproduction, script instructing the receiving apparatus to reproduce the program of the second specific program in a case that the program data of the second specific program has been stored in the storage unit, each script being automatically stored when the receiving apparatus receives the scripts;

[[a]] an event message generation step for generating a plurality of first ~~storage instructions~~ event messages for instructing storage, a plurality of second ~~storage-instructions~~ event messages for instructing storage, ~~a plurality of second storage-instructions~~, a first ~~reproduction-instruction~~ event message for instructing reproduction and a second ~~reproduction-instruction~~ event message for instructing reproduction; and

a transmission step for transmitting a normal program that includes a video stream and an audio stream, and

repeatedly transmitting the scripts during the total time period, transmitting (i) the first ~~storage-instruction~~ event messages for instructing storage before the first time period, the first ~~reproduction-instruction~~ event message for instructing reproduction at the starting time of the first time period (iii) the second ~~storage-instruction~~ event messages for instructing storage before the second time period, and (iv) the second ~~reproduction-instruction~~ event message for instructing reproduction at the starting time of the second time period,

(b) in accordance with the result of allotment by the allotment step,

(i) repeatedly multiplex the program data of the data broadcasting
45 program with the normal program based on a data carousel transmission method during all of
time periods other than the first and the second time periods in the total time period, and

(ii) repeatedly multiplex the program data of each of the first and the
second specific program during the total time period;

wherein, the first and the second specific programs have the program data that
50 relates to first and second commercial messages, respectively, which are inserted in the normal
program, and

the reproduction time period of the specific program is the same as a broadcast
time period of the commercial message.

20. (Currently Amended) A program recording medium which is readable for a
computer in a broadcasting apparatus, the broadcasting apparatus transmits a data broadcasting
program and a first and a second specific programs which are inserted in the data broadcasting
program, a computer program embodied on the program recording medium has the computer
5 conduct the steps of:

an allotment step for (a) allotting a broadcasting bandwidth for a first time period
and a second time period to the first specific program and the second specific program, the first
time period and the second time period are included in a total time period between a starting time
and a finishing time for broadcasting the data broadcasting program, and (b) allotting (1) a
10 broadcasting bandwidth to the data broadcasting data program in the total time period except for
the first time period and the second-time period (2) a part of the broadcasting bandwidth to the
first specific program for a time period preceding to the first time period in the total time period,

and (3) a part of the broadcasting bandwidth to the second specific program for a time period preceding to the second time period in the total time period;

15 a script instruction generation step for (i) generating (a) when a receiving apparatus receives a first ~~storage instruction~~ event message for instructing storage, a script for storing program data of the first specific program in a storage unit of the receiving apparatus and (b) when receiving a second ~~storage instruction~~ event message for instructing storage, a script for storing program data of the second specific program in the storage unit and (ii) generating (a)

20 when receiving a first ~~reproduction instruction~~ event message for instructing reproduction, a script instructing the receiving apparatus to reproduce the program data of the first specific program in a case that the program data of the specific program has been stored in the storage unit and (b) when receiving a second ~~reproduction instruction~~ event message for instructing reproduction, a script instructing the receiving apparatus to reproduce the program data of the

25 second specific program in a case that the program data of the second specific program has been stored in the storage unit, each script being automatically stored when the receiving apparatus receives the scripts;

 [[a]] an event message generation step for generating a plurality of first ~~storage instructions~~ event messages for instructing storage, a plurality of second ~~storage instructions~~

30 event messages for instructing storage, a first ~~reproduction instruction~~ event message for instructing reproduction and a second ~~reproduction instruction~~ event message for instructing reproduction; and

 a transmission step for transmitting a normal program that includes a video stream and an audio stream, and

35 repeatedly transmitting (i) the first storage instructions before the first time period (ii) the second storage instructions before the second time period (iii) the first reproduction

instruction at the starting time of the first time period, and (iv) the second reproduction instruction at the starting time of the second time period, and

(b) in accordance with the result of allotment by the allotment step

40 (i) repeatedly multiplex the program data of the data broadcasting program during all of time periods other than the first and the second time periods in the total time period, and

(ii) repeatedly multiplex the program data of each of the first specific program during the first time period and the time period preceding to the first timer period; and

45 (iii) repeatedly multiplex the program data of the second specific program during the second time period and the time period preceding to the second time period;

wherein, in accordance with the result of allotment by the allotment step, repeatedly multiplex program data of the first and second specific program with the normal program based on a data carousel transmission method and transmit a first multiplexed result
50 while multiplexing the program data of the first and second specific programs and the script with the normal program and transmitting a second multiplexed result in the preceding time period, and repeatedly multiplex the program data of the specific first and second programs and the script with the normal program and transmit the second multiplexed result in the reproduction time period,

55 the first and the second specific programs have the program data that relates to first and second commercial messages, respectively, which are inserted in the normal program, and

the reproduction time period of the specific program is the same as a broadcast time period of the commercial message.

21. (Currently Amended) A program that is readable for a computer in a broadcasting apparatus, the broadcasting apparatus broadcasts a specific program to which a reproduction time period between a starting time and finishing time is specified, the reproduction being performed by a receiving apparatus, the program has the computer conduct the steps of:

5 an allotment step for allotting a broadcasting bandwidth for the reproduction time period to the specific program and allotting a part of the broadcasting bandwidth for a preceding time period immediately before the reproduction time period to the specific program and the other part of the broadcasting bandwidth to another program;

 a script generation step for generating (a) when receiving apparatus receives [[a]]
10 ~~an storage instruction event message for instructing storage~~, a script for storing program data of the specific program in a storage unit of the receiving apparatus, and (b) when the receiving apparatus receives ~~a reproduction instruction~~ an event message for instructing reproduction, a script for the receiving apparatus to reproduce the program data of the specific program in a case where the program data of the specific program has been stored in the storage unit, each script
15 being automatically stored when the receiving apparatus receives the scripts;

[[a]] an event message generation step for generating a plurality of storage instructions event messages for instructing storage and [[a]] an reproduction instruction event message for instructing reproduction;

 a transmission step for transmitting a normal program that includes a video stream
20 and an audio stream, and further in accordance with the result of allotment in the allotment step, repeatedly multiplex program data of the other program with the normal program based on a data carousel transmission method and transmit a first multiplexed result while multiplexing the program data of the specific program and the script with the normal program and transmitting a

second multiplexed result in the preceding time period, and repeatedly multiplex the program
25 data of the specific program and the script with the normal program and transmit the second
multiplexed result in the reproduction time period; and

a control step operable for controlling a transmission unit to transmit the ~~storage~~
~~instructions~~ event messages for instructing storage in the preceding time period and to transmit
the ~~reproduction instruction~~ event message for instructing reproduction at the starting time,

30 wherein the specific program has the program data that relates to a commercial
message which is inserted in the normal program, and

the reproduction time period of the specific program is the same as a broadcast
time period of the commercial message.

22. (Currently Amended) A program that is readable for a computer in a
broadcasting apparatus, the broadcasting apparatus transmits a data broadcasting program, and a
first and a second specific programs which are inserted in the data broadcasting program, a total
time period between a starting time and a finishing time for broadcasting the data broadcasting
5 program including a first time period during which the first specific program is broadcast and a
second time period during which the second specific program is broadcast the program has the
computer conduct the steps of:

an allotment step for

(a) allotting a part of the broadcasting bandwidth to the first and the second
10 specific programs and the other part of the broadcasting bandwidth to the data broadcasting
program for all of time periods other than the first and the second time periods in the total time
period, and

(b) allotting a part of the broadcasting bandwidth to the first specific program and the other part of the broadcasting bandwidth to the second specific program for the first and
15 the second time periods;

a script instruction generation step for (i) generating (a) when a receiving apparatus receives a first ~~storage-instruction~~ event message for instructing storage, a script for storing program data of the first specific program in a storage unit of the receiving apparatus and (b) when receiving a second ~~storage-instruction~~ event message for instructing storage, a script for
20 storing program data of the second specific program in the storage unit, and (ii) generating (a) when receiving a first ~~reproduction-instruction~~ event message for instructing reproduction, a script for the receiving apparatus to reproduce the program data of the first specific program in a case that the program data of the specific program has been stored in the storage unit and (b) when receiving a second ~~reproduction-instruction~~ event message for instructing reproduction, a
25 script for the receiving apparatus to reproduce the program data of the second specific program in a case that the program data of the second specific program has been stored in the storage unit,
each script being automatically stored when the receiving apparatus receives the scripts;

[[a]] an event message generation step for generating a plurality of first storage instructions event messages for instructing storage, a plurality of second ~~storage-instructions~~
30 event messages for instructing storage, a first ~~reproduction-instruction~~ event message for instructing reproduction and a second ~~reproduction-instruction~~ event message for instructing reproduction; and

a transmission step for transmitting a normal program that includes a video stream and an audio stream, and

35 (a) repeatedly transmitting the scripts during the total time period, transmitting the first ~~storage-instructions~~ event messages for instructing storage before the first

time period (ii) the first ~~reproduction instruction~~ event message for instructing reproduction at the starting time of the first time period (iii) the second ~~storage instructions~~ event messages for instructing storage before the second time period, and (iv) the second ~~reproduction instruction~~ event message for instructing reproduction at the starting time of the second time period, and

(b) in accordance with the result of allotment by the allotment step,

(i) repeatedly multiplex the program data of the data broadcasting program during all of time periods other than the first and second time periods in the total time period, and with the normal program based on a data carousel transmission

(ii) repeatedly multiplex the program data of each of the first and the second specific programs during the total time period with the normal program;

wherein, the first and the second specific programs have the program data that relates to first and second commercial messages, respectively, which are inserted in the normal program, and

the reproduction time period of the specific program is the same as a broadcast time period of the commercial message.

23. (Currently Amended) A program that is readable for a computer in a broadcasting apparatus, the broadcasting apparatus transmits a data broadcasting program and a first and a second specific programs which are inserted in the data broadcasting program, the program has the computer conduct the steps of:

an allotment step for (a) allotting a broadcasting bandwidth for a first time period and a second time period to the first specific program and the second specific program, the first time period and the second time period are included in a total time period between a starting time and a finishing time for broadcasting the data broadcasting program, and (b) allotting (1) a

broadcasting bandwidth to the data broadcasting data program in the total time period except for
10 the first time period and the second time period (2) a part of the broadcasting bandwidth to the
first specific program for a time period preceding to the first time period in the total time period,
and (3) a part of the broadcasting bandwidth to the second specific program for a time period
preceding to the second time period in the total time period;

a script instruction generation step for (i) generating (a) when receiving a first
15 ~~storage instruction~~ event message for instructing storage, a script for storing program data of the
first specific program in a storage unit of a receiving apparatus and (b) when receiving a second
~~storage instruction~~ event message for instructing storage, a script for storing program data of the
second specific program in the storage unit, and (ii) generating (a) when receiving a first
~~reproduction instruction~~ event message for instructing reproduction, a script instructing the
20 receiving apparatus to reproduce the program data of the first specific program in a case that the
program data of the specific program has been stored in the storage unit and (b) when receiving a
second ~~reproduction instruction~~ event message for instructing reproduction, a script instructing
the receiving apparatus to reproduce the program data of the second specific program in a case
that the program data of the second specific program has been stored in the storage unit, each
25 script being automatically stored when the receiving apparatus receives the scripts;

a message generation step for generating a plurality of first storage instructions, a
plurality of second storage instructions, a first reproduction instruction and a second
reproduction instruction; and

a transmission step for transmitting a normal program that includes a video stream
30 and an audio stream and further in accordance with the allotment step

repeatedly transmitting (i) the first ~~storage instructions~~ event messages for
instructing storage before the first time period (ii) the second ~~storage instructions~~ event messages

for instructing storage before the second time period (iii) the first ~~reproduction instruction event~~
message for instructing reproduction at the starting time of the first time period, and (iv) the
35 ~~second reproduction instruction event message for instructing reproduction~~ at the starting time of
the second time period, during the total time period, and

(b) in accordance with the result of allotment by the allotment unit,

(i) repeatedly multiplexing the program data of the data broadcasting
program during all of time periods other than the first and the second time periods in the total
40 time period,

(ii) repeatedly multiplexing the program data of the first specific
program during the first time period and the time period preceding to the first time period, and

(iii) repeatedly multiplexing the program data of the second specific
program during the second time period and the time period preceding to the second time period;

45 and

wherein, in accordance with the result of allotment by the allotment unit,
repeatedly multiplex program data of the first and second specific program with the normal
program based on a data carousel transmission method and transmit a first multiplexed result
while multiplexing the program data of the first and second specific programs and the script with
50 the normal program and transmitting a second multiplexed result in the preceding time period,
and repeatedly multiplex the program data of the specific first and second programs and the
script with the normal program and transmit the second multiplexed result in the reproduction
time period,

the first and the second specific programs have the program data that relates to
55 first and second commercial messages, respectively, which are inserted in the normal program,
and

the reproduction time period of the specific program is the same as a broadcast time period of the commercial message.

24. (Previously Presented) A broadcasting method for reducing television receiver latencies in displaying an interactive content portion of broadcast television commercials, the method comprising the steps of:

5 assigning a television program to a first time slot and a commercial to a second time slot immediately after the first time slot;

allocating a first portion of the available bandwidth of the first time slot to audiovisual content of the television program;

allocating a second portion of the available bandwidth of the first time slot to a specific program having interactive content for a commercial;

10 allocating a first portion of the available bandwidth of the second time slot to the specific program;

allocating a second portion of the available bandwidth of the second time slot to audiovisual content of the commercial;

15 transmitting the audiovisual content of the television program during the first time slot;

repeatedly transmitting in a carousel format the specific program during the first time slot;

transmitting the audiovisual content of the commercial during the second time slot;

20 repeatedly transmitting in a carousel format the specific program during the second time slot,

transmitting a script for storing the specific program,
transmitting a script for executing the specific program, and
receiving and storing the specific program at the television receiver.

25.-28. (Cancelled)

29. (New) A broadcasting apparatus that broadcasts a specific program to which a reproduction time period between a starting time and a finishing time is specified, the reproduction being performed by a receiving apparatus, the broadcasting apparatus comprising:

allotment unit operable to allot a broadcasting bandwidth for the reproduction
5 time period to the specific program and allotting a part of the broadcasting bandwidth for a preceding time period immediately before the reproduction time period to the specific program and the other part of the broadcasting bandwidth to another program;

script generation unit operable to generate (a) when the receiving apparatus receives an event message for instructing storage, a script for storing program data of the specific
10 program in a storage unit of the receiving apparatus, and (b) when the receiving apparatus receives an event message for instructing reproduction, a script for the receiving apparatus to reproduce the program data of the specific program in a case where the program data of the specific program has been stored in the storage unit, each script being automatically stored when the receiving apparatus receives the script;

15 event message generation unit operable to generate the event message for instructing storage and the event message for instructing reproduction;

transmission unit operable to transmit a normal program that includes a video stream and an audio stream, and further in accordance with the result of allotment by the allotment unit, repeatedly multiplex program data of the other program with the normal program
20 based on a data carousel transmission method and transmit a first multiplexed result while multiplexing the program data of the specific program and the script with the normal program and transmitting a second multiplexed result in the preceding time period, and repeatedly multiplex the program data of the specific program and the script with the normal program and

transmit the second multiplexed result in the reproduction time period, and repeatedly transmit,
25 as an event message, each script generated by the script generation unit; and

control unit operable to control the transmission unit to transmit the event message for instructing storage generated by the event message generation unit in the preceding time period and to transmit the event message for instructing reproduction generated by the event message generation unit at the starting time,

30 wherein the specific program has the program data that relates to a commercial message which is inserted in the normal program, and

the reproduction time period of the specific program is the same as a broadcast time period of the commercial message.